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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/238,075	01/27/1999	JAMES M. CLAUSS	109869-130055	6752

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EXAMINER	
MCCARTNEY, LINZY T	
ART UNIT	PAPER NUMBER
2671	11

DATE MAILED: 03/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/238,075	CLAUSS, JAMES M.	
	Examiner	Art Unit	
	Linzy McCartney	2671	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18 and 20-25* is/are rejected.

7)☒ Claim(s) *19* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/23/04 has been entered.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3, 6, 9, 10, 13, 20, 21, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,815,154 to Hirschtick et al. (Hirschtick) in view of Fischer et al, "Design Environments for Constructive and Argumentative Design" (Fischer) further in view of Lemke, "Using Critics to Empower Users" (Lemke).

a. Referring to claim 1, Hirschtick discloses identifying a failure within a first failed feature in a computer aided design (CAD) assembly (column 9, lines 25-34 and Figure 18). Hirschtick does not explicitly disclose automatically providing a first set of treatments for the failure within the first failed feature from which to select, said first set of treatments based at least in part on the feature within the first failed feature. Fischer discloses automatically providing a first set of treatments for a failure said first set of treatments based at least in part on the failure within the first failed feature (page 271,

column 2, first full paragraph, Fig. 1). Lemke discloses said failure resulting from modifications of one or more features of the CAD assembly (page 340, column 2, paragraph 1). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method of Hirschtick by providing a first set of treatments for a failure resulting from modifications of one or more features of the CAD assembly as taught by Fischer and Lemke. The suggestion/motivation for doing so would have been because it would augment the creative and analytical skills of the designers (Fischer, page 269, column 1, paragraph 3) and because critiquing is an effective way to make use of computer knowledge bases to aid uses (Lemke, column 1, paragraph 1).

b. Referring to claim 3, Hirschtick discloses wherein identifying is based at least in part on at least one of an error message and a warning message generated during execution of the CAD assembly (column 9, lines 25-34).

c. Referring to claim 6, Hirschtick discloses receiving a selection indicating the first failed feature (column 9, lines 25-34 and Figure 18).

d. Referring to claim 9, Hirschtick discloses one of providing a detailed textual description of the failure within the first failed feature; designating the first failed feature in a graphical representation of the CAD assembly; stepping through execution of the CAD assembly; and listing at least one feature upon which the first failed feature depends (column 9, lines 25-34 and Fig. 18).

e. Referring to claim 10, Hirschtick discloses one of providing at least one of an error message and a warning message corresponding to the failure within the first failed feature, said error and/or warning message being generated during execution of the CAD

assembly; providing an extended message from a data structure of extended messages based on the failure within the first failed feature; and providing a calculated response based on deviation of the failure within the first failed feature from acceptable values (column 9, lines 25-34 and Fig. 18).

f. Referring to claim 13, Hirschtick discloses wherein stepping through execution of the CAD assembly comprises at lest one of executing only a next feature in the CAD assembly after receiving a next feature indication from a user; sequentially executing the CAD assembly at a reduced rate; pausing execution after each feature on which the first failed feature depends is executed; and designating only a most recently executed feature in the CAD assembly as the CAD assembly is executed (column 8, lines 51- 67).

g. Claim 20 is rejected with the rationale of the rejection of claim 1. Claim 20 is merely claim 1 recited as an apparatus.

h. Claim 21 is rejected with the rationale of the rejection of claims 6 and 9. Claim 21 is merely claims 6 and 9 in apparatus form.

i. Claim 23 is rejected with the rationale of the rejection of claim 1. Claim 23 is merely claim 1 recited as a program.

j. Claim 24 is rejected with the rationale of the rejection of claims 6 and 9. Claim 24 is merely claims 6 and 9 recited as a program.

2. Claims 14, 15, 17, 18, 22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirschtick in view of Fischer and Lemke as applied to claim 1 above further in view of Weitzmanet al., "Artificial Intelligence in Engineering Design".

a. Referring to claim 14, Hirschtick does not explicitly disclose receiving a selection indicating one of the first set of treatments; and automatically initiating the selected treatment. Weitzman discloses the aforementioned limitation (page 453, Section 14.4.3, paragraph 2). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method of Hirschtick by receiving a selection indicating one of the first set of treatments; and automatically initiating the selected treatment as taught by Weitzman. The suggestion/motivation for doing so would have been to interactively suggest incremental improvements to the user (Weitzman, page 459, paragraph 3).

h. Referring to claim 15, Hirschtick does not explicitly disclose the first set of treatments, a delete treatment, a suppress treatment, a reorder treatment, and a targeted edit treatment, and wherein automatically initiating the selected treatment comprises one of opening a user interface used to create the CAD assembly; deleting the first failed feature from the CAD assembly; suppressing the first failed feature in the CAD assembly; moving the first failed feature to a different place in an execution sequence of the CAD assembly; and opening a reduced function user interface to edit a parameter of the first failed feature predicted to be responsible for the failure within the first failed feature. Weitzman discloses the aforementioned limitation (Fig. 14-11, caption). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method of Hirschtick with the teachings of Weitzman. The suggestion/motivation for doing so would have been to interactively suggest incremental improvements to the user (Weitzman, page 459, paragraph 3).

i. Referring to claim 17, Hirschtick wherein moving the first failed feature comprises one of receiving a user indication of where the first failed feature should be moved; and receiving a selection indicating a suggested location for the first failed feature (column 14, line 61 – column 15, line 19).

j. Referring to claim 18, Hirschtick discloses opening a parameter editing field and suggesting at least one of value and a value range for the parameter (Fig. 12).

m. Claim 22 is rejected with the rationale of the rejection of claim 14. Claim 22 is merely claim 14 recited as an apparatus.

p. Claim 25 is rejected with the rationale of the rejection of claim 14. Claim 25 is merely claim 14 recited as a program.

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirschtick in view of Fischer in view of Lemke as applied to claim 1 further in view of Krause et al, "Processing of CAD-Data – Conversion, Verification and Repair" (Krause).

a. Referring to claim 2, Hirschtick does not explicitly disclose identifying failures within a plurality of additional failed features among a plurality of features comprising the CAD assembly or automatically providing a plurality of respective sets of treatments for each failure within the plurality of additional failed features from which to select, each of said plurality of respective sets of treatments based at least in part on a corresponding failure. Krause discloses identifying failures within a plurality of additional failed features among a plurality of features comprising the CAD assembly (page 252, column 2, paragraphs 2-3 and Figure 6). Fischer discloses automatically providing a plurality of respective sets of treatments for each failure within the plurality

of additional failed features from which to select, each of said plurality of respective sets of treatments based at least in part on a corresponding failure. (page 271, column 1, first full paragraph, Fig. 1). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method of Hirschtick by identifying failures within a plurality of failed features and providing treatments for each failure as taught by Krause and Fischer. The suggestion/motivation for doing so would have been because it would improve the integrity of CAD data (Krause, Abstract) and because it would augment the creative and analytical skills of the designers (Fischer, page 269, column 1, paragraph 3)

4. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirschtick in view of Fischer further in view of Lemke as applied to claim 1 further in view of U.S. Patent No. 5,790,780 to Brichta et al. (Brichta).

a. Referring to claim 4, the method of Hirschtick as applied to claim 1 above meets the limitations recited in claim 4 except Hirschtick does not explicitly disclose generating a diagnosis object for each failed feature of the CAD assembly, each diagnosis object comprising information to facilitate at least one of identifying and illustrating at least one failure in a respective failed feature; storing each diagnosis object in persistent memory; retrieving a diagnosis object from the persistent memory corresponding to the first failed feature based on an indication of the first failed feature; and providing information to facilitate at least one of identifying and illustrating the failure in the first failed feature based on diagnosis object corresponding to the first failed feature. Fischer discloses generating a diagnosis object for each failure of the CAD assembly and providing

information to facilitate at least one of identifying and illustrating the failure based on the diagnosis object (page 271, column 2, first full paragraph, Fig. 1). Brichta discloses storing a diagnosis object in persistent memory and retrieving a diagnosis object from persistent memory (Abstract). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method of Hirschtick with the teachings of Fischer and Brichta. The suggestion/motivation for doing so would have been because it would augment the creative and analytical skills of the designers (Fischer, page 269, column 1, paragraph 3) and generate analytical information about failures that can be used for a variety of purposes (Brichta, column 2, lines 29-31).

b. Referring to claim 5, the method of Hirschtick as applied to claim 4 above meets the limitations recited in claim 5 except Hirschtick does not explicitly disclose the information comprises at least one of a CAD assembly identifier, a failure text description, a feature identifier, an instance transform, a feature identifier, an instance transform, a feature geometry, a feature coordinate set, a failure result type, and a set of feature dependencies. Fischer discloses the information comprises at least one of a CAD assembly identifier, a failure text description, a feature identifier, an instance transform, a feature identifier, an instance transform, a feature geometry, a feature coordinate set, a failure result type, and a set of feature dependencies (page 271, column 2, first full paragraph, Fig. 1). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method of Hirschtick with the teachings of Fischer. The suggestion/motivation for doing so would have been because it would

augment the creative and analytical skills of the designers (Fischer, page 269, column 1, paragraph 3).

5. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being obvious over Hirschtick in view of Fischer in view of Lemke as applied to claim 6 above further in view of U.S. Patent 6,232,982 to Harding.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

a. Referring to claim 7, the modified method of Hirschtick as applied to claim 6 above meets the limitations recited in claim 7 except wherein receiving the selection

comprises one of receiving a pointer command from a browser that lists the first failed feature; receiving a toolbar command followed by a pointer indication in a list including the first failed feature; and receiving a menu command followed by a pointer indication in a list including the first failed feature. Harding discloses the aforementioned limitation (column 5, line 60 – column 6, line 27 and Figure 2B). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method of Hirschtick with the teachings of Harding. The suggestion/motivation for doing so would have been to provide additional debugging information to the user (Harding, column 6, lines 21-24).

b. Referring to claim 8, the modified method of Hirschtick as applied to claim 1 meets the limitations recited in claim 8 except providing an indication of at least one primary failed feature if the first failed feature is a secondary failed feature; and providing an option to select from the at least one primary failed feature if the first failed feature is a secondary feature. Harding discloses the aforementioned limitation (column 5, line 60 – column 6, line 27 and Figure 2B). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method of Hirschtick with the teachings of Harding. The suggestion/motivation for doing so would have been to provide additional debugging information to the user (Harding, column 6, lines 21-24).

6. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirschtick in view of Fischer in view of Lemke as applied to claim 9 above further in view of Barequet et al, "Repairing Cad Models" Barequet.

a. Referring to claim 11, the modified method of Hirschtick as applied to claim 9 above meets the limitations recited in claim 1 except designating the first failed feature comprising at least one of implementing a command to toggle highlighting of a representation of the first failed feature; sonaring in on the representation; and zooming in of the representation. Barequet discloses the aforementioned limitation (page 367, column 2, paragraph 6). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to further modify the method of Hirschtick with the teachings of Barequet. The suggestion/motivation for doing so would have been to allow the user to see small areas of the geometry while maintaining context (Barequet, page 367, column 2, paragraph 6).

b. Referring to claim 12, Hirschtick does not explicitly disclose generating at least one of a set of at least one edge of the first failed feature, a set of at least one surface of the first failed feature, and a graphical error icon for use as the representation of the first failed feature, wherein the representation indicates where the first failed feature would have been generated in the CAD assembly. Barequet discloses the aforementioned limitation (page 467, column 2, paragraphs 1-3). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to further modify the method of Hirschtick with the teachings of Barequet. The suggestion/motivation for doing so would have been to allow the user recognize errors in the model (page 467, column 2, paragraphs 1-3).

7. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirschtick in view of Fischer in view of Lemke in view of Weitzman as applied to claim 15 above further in view of Barequet et al, "Repairing Cad Models" (Barequet)

a. Referring to claim 16, Hirschtick does not explicitly disclose wherein opening the user interface comprises at least one of zooming in on coordinates of the first failed feature in the CAD assembly; designating the first failed feature in the CAD assembly; and rolling back execution of the CAD assembly to just before execution of the first failed feature. Barequet discloses the aforementioned limitation (page 367, column 2, paragraphs 3-6). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to further modify the method of Hirschtick with the teachings of Barequet. The suggestion/motivation for doing so would have been to allow the user recognize errors in the model (page 467, column 2, paragraphs 1-3).

Allowable Subject Matter

8. Claim 19 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

9. Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Linzy McCartney** whose telephone number is **(703) 605-0745**. The examiner can normally be reached on Mon-Friday (8:00AM-5: 30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mark Zimmerman**, can be reached at **(703) 305-9798**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

ltm
10 March 2004

MARK ZIMMERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600